Risk, Uncertainty, and Strategy in Markets and Games: Theory and Empirics

Faculty of Economics and Business Administration
Babeş-Bolyai University

Schedule

Monday, February 18th 2013
FSEGA Campus, 1st Floor, Room 118

Time	Name&affiliation	Title
13.00-13.30	Introductory remarks by Babeş-Bolyai University representatives	
13.30-14.30	Lucian Croitoru, *National Bank of Romania*	Policy perspectives: The end of regulation and the last regulator
14.30-14.40	Coffee break	
14.40-15.40	Sebastian Buhai, *Aarhus University*	Real Options in Labor Markets: Wage-Tenure Profiles and Efficient Separation with Stochastic Job Productivity
15.40-16.00	Coffee break	
16.00-17.00	Cristian Litan, *Babeş-Bolyai University*	Generic Determinacy of Nash Equilibrium in Outcome Games with Small Number of Strategies and Outcomes
17.00-17.10	Coffee break	
17.10-18.10	Andrei Tanase, *Tor Vergata University*	Using expected shortfall and the analogy to prospect theory to measure and control for risk in asset allocation
18.30-19.15	Brainstorming	Participants: Speakers and BBU representatives FSEGA Campus, Room 101
19.30-21.00	Dinner	*Piramida Restaurant* of Babeş-Bolyai University (speakers and BBU representatives)

Tuesday, February 19th 2013
FSEGA Campus, 1st Floor, Room 118

Time	Name&affiliation	Title
9.30-10.30	Oana R. Bode, *Babeş-Bolyai University*	Licensing under Cournot vs. Bertrand competition
10.30-10.40	Coffee break	
10.40-11.40	Mihai Copaciu, *Bucharest Academy of Economic Studies*	Estimation of an open economy DSGE model with financial and employment frictions for Romania
12.00-13.30	Lunch at FSEGA	*Panorama Café* FSEGA Campus, 6th Floor
13.30-14.30	Alexandru Todea, *Babeş-Bolyai University*	Investor Protection and Stock Market Efficiency: Empirical Evidence from an International Panel Dataset
14.30-14.40	Coffee break	
14.40-15.40	Simona Mutu, *Babeş-Bolyai University*	Systemic risk and contagion spillovers in the European banking system. A CoVaR approach
15.40-16.00	Coffee break	
16.00-17.00	Corneliu Todirica, *Central European University*	DeGroot model of learning: accounting for precision of beliefs
17.30-19.30	Dinner	*FSEGA Campus* (speakers and BBU representatives)

ABSTRACTS

Real Options in Labor Markets: Wage-Tenure Profiles and Efficient Separation with Stochastic Job Productivity

Sebastian Buhai

Aarhus University

The presentation illustrates the applicability of option valuation methodology, most often used in financial asset pricing, in modeling worker-firm dynamics—and thus complementing more standard labor economics approaches, such as search and matching or Bayesian learning. Here, we model the dynamic relationship between one worker and one firm, matching in a job, given an environment characterized by uncertain evolution of the job's inside productivity over the worker's best alternative outside productivity. The model is based on efficient bargaining between the two parties. Starting a job requires an irreversible specific investment, which is lost upon separation. The combination of investment irreversibility and worker log productivity following a Brownian diffusion allows application of the real option theory. We derive the worker-firm optimal separation rule and the distribution of job tenures. Assuming a standard bargaining rule for wage determination, we can further calculate the tenure profile in wages. We show how to identify and estimate the model with panel data containing information on job spells and related wages. Our model is tested on a PSID sample. The model has a good fit, with the expected shortcomings of ignoring downward wage rigidity and the failure of the assumption of no frictions in job matching. Inter alia, we show that most of the wage returns to tenure are due to selectivity on the outside option.

Generic Determinacy of Nash Equilibrium in Outcome Games with Small Number of Strategies and Outcomes

Cristian Litan

Faculty of Economics and Business Administration, Babeș-Bolyai University

We review results in the literature on the generic finiteness of the equilibrium outcome distributions in outcome games. We present partial results in the case of games with small number of strategies available for each player or games characterized by small number of outcomes.

Using expected shortfall and the analogy to prospect theory to measure and control for risk in asset allocation

Andrei Tănase
Tor Vergata University, Rome

The Expected Shortfall is a coherent risk measure that averages out all losses more severe than the Value at Risk, that is a threshold of loss tolerance used in asset allocation. We introduce the concept of Weighted Expected Shortfall that not only is proven to be a coherent risk measure that takes into account all losses higher than the VaR but can also accommodate subjectivity in assessing the probability attributed to extreme events. This last extension is similar to the notion of probability weighting and subjective risk aversion introduced by the prospect theory. After defining WES and presenting a class of semiparametric estimators based on quantile regression, we formalize an asset allocation model that maximizes expected return with a constraint on the WES and develop an empirical application on European financial data. Portfolios are compared in terms of various performance indicators and stability measures. The empirical application results point that WES portfolios are more stable on a weekly basis due to minimizing the difference between the estimated risk forecast error and the ex-post empirical risk.

Licensing under Cournot vs. Bertrand competition

Oana R. Bode
Faculty of Mathematics and Computer Science, Babeș-Bolyai University
Fernanda A. Ferreira
ESEIG, Polytechnic Institute of Porto
Flavio Ferreira
ESEIG, Polytechnic Institute of Porto

In this paper we consider, on one hand, a differentiated Cournot model, and, on the other hand, a differentiated Bertrand model, when one of the firms engages in an R&D process that gives an endogenous cost-reducing innovation. The aim of the present paper is two-fold. The first is to study the licensing of the cost-reduction by a per-unit royalty and a fixed-fee in these Cournot and Bertrand models. The second is to do a direct comparison between Cournot model and Bertrand model. We analyze the implications of these types of licensing contracts over the R&D effort, the profits of the firms, the consumer surplus and the social welfare. We show that some previous results for two-part tariff licensing are nor robust, in the sense that they can be not true for just either a per-unit royalty contract or a fixed-fee contract. Furthermore, by

using comparative static analysis, we conclude that the degree of the differentiation of the goods assumes a great importance in the results.

Estimation of an open economy DSGE model with financial and employment frictions for Romania

Mihai Copaciu

Academy of Economic Studies, Bucharest

This paper estimates the models of Christiano et al. (2011) on Romanian data. In doing so, it is found that adding financial and employment frictions to the baseline open economy model improve its capacity in matching the standard deviations of the extremely volatile observed series. A subset of shocks (consumption preference, entrepreneurial wealth, temporary productivity, risk premium and domestic markup) is found to be the main driver of the fluctuations in variables. The marginal efficiency of investment and investment specific technology shocks do not play a major role in explaining business cycle fluctuations. The growth rate of GDP in the expansion was driven by permanently positive contributions of the unit root neutral technology, entrepreneurial wealth and country risk premium shocks, while during the crisis period, negative technology neutral, both permanent and temporary, and consumption preferences shocks greatly accentuated the downturn.

Investor Protection and Stock Market Efficiency:
Empirical Evidence from an International Panel Dataset

Alexandru Todea, Anita Pleșoianu

Faculty of Economics and Business Administration, Babeș-Bolyai University

We investigate the relation between stock market informational efficiency and investor protection on a sample of 49 stock market indices over the period 1999 – 2010. Unlike previous studies whose common denominator has been cross-section analysis, in this work we have adapted the methodology in order to consider the time-varying pattern of both efficiency and investor protection mechanism. The results, supported by a series of robustness tests, show a direct and significant relation between stock markets informational efficiency and investor protection. Further, we have identified several channels through which high investor protection induces a higher degree of informational efficiency. Finally, legal origin does not qualify as significant explanatory factor of efficiency of stock markets.

Systemic risk and contagion spillovers in the European banking system.
A CoVaR approach

Simona Mutu

Faculty of Economics and Business Administration, Babeș-Bolyai University

This paper investigates the systemic risk and contagion spillovers within banking groups from the European zone during the 2008-2011 period. In order to capture the extreme movements we have modeled the data through tail risk measures and semi-parametric Quantile Regression, calculating the Conditional Value at Risk indicator as a measure of systemic risk. The results show that systemic risk is time-varying, as a function of each bank's Value at Risk and a set of indices representative for the interbank, capital and governmental bonds markets. Risk measures are high and volatile after the 2008 financial crisis and banks have different contributions to systemic risk that are not proportional with their maximum expected loss level. Furthermore, we found evidence that the future contribution of banks to systemic risk and the negative externalities transmitted to other banks in the system can be reduced by countercyclical adjustments of the assets and liabilities portfolio.

DeGroot model of learning: accounting for precision of beliefs

Corneliu Todirică
Central European University

We propose a modification of the standard DeGroot model used for modeling learning in a social network. While in the standard model agents update their beliefs by averaging their neighbors' beliefs with weights given by the trust assigned to them, we propose a modification in which the trust is given by the precision of each agent's beliefs. The proposed modification maintains the simple structure and tractability, but additionally accounts for accuracy of one's beliefs. Convergence of beliefs is still achieved and the social influence vector is given again by a measure of centrality. A notable difference is that the proposed model generates "wiser" societies.